

U.S. Patent Application Serial No. 10/523,034  
Amendment filed July 15, 2008  
Reply to OA dated March 18, 2008

### REMARKS

Claims 1-4, 7-9, 11 and 13 are pending in this application. Claims 7-9 are amended herein. Upon entry of this amendment, claims 1-4, 7-9, 11 and 13 will be pending. Entry of this amendment and reconsideration of the rejections are respectfully requested.

No new matter has been introduced by this Amendment. A minor amendment has been made to claims 7-9 for clarity. In these claims, the recitation that the parameter "S" refers to porosity is deleted. This recitation is unnecessary in these claims since the parameter "S" is specifically defined in the claims in terms of measurable parameters, and the term "porosity" is not needed for antecedent basis elsewhere in the claims.

**Claims 3, 7-9 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. (Office action paragraph no. 2)**

Applicant notes that the rejection is stated to apply to claims 3 and 7-9, yet the Examiner refers to claim 4, not claim 3. Applicant assumes that the Examiner meant to reject claims 4 and 7-9.

The rejection of claims 4 and 7-9 is respectfully traversed, and reconsideration is requested.

The Examiner states that "it is not clear what pores are being referred to[;] no material having pores is recited in any of the independent claims."

Applicant respectfully disagrees. The term "pore" occurs twice in claim 4. The first occurrence is: "Dxs: average pore diameter ( $\mu\text{m}$ ) of the flower thinning agent ...." This appears to

be a clear recitation that the pores are in the flower thinning agent. The second occurrence is in the last line of claim 4: "Dys/Dxs: amount of average pore diameter." This clearly refers to the same pores as in the first occurrence.

Applicant further notes that these uses of the word "pore" are actually defining the word "pore," and, moreover, are not necessary for the definition of the claimed flower thinning agent. Therefore, the fact that the term "pore" does not occur earlier in the claims is irrelevant.

The average pore diameter Dxs of the flower thinning agent is measured by a mercury penetration method, the particulars of which are described on page 18, lines 7-21, of the present specification. Dxs is a parameter that is generally used in this industry to indicate pore diameter of substances. It is irrelevant whether the pores are between the particles or within the particles. In other words, if the pores exist in the primary particles themselves, the pores within the particles are included, and if the primary particles are agglomerated to form the secondary agglomerated particles, the pores between the particles are also included.

For simplicity, the naming of term "S" as "porosity" has been deleted from claims 7-9. The term "S" is fully defined in these claims in terms of measurable parameters, and this recitation of "porosity" is not needed for antecedent basis.

**Claims 1-4, 6, 11, 13 are rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Welshimer et al. (U.S. Patent Application Publication No. 2001/0042494). (Office action paragraph no. 4)**

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The rejections are respectfully traversed, and reconsideration is requested.

Welshimer discloses a manufactured granular substrate composition suitable for use as a carrier for active chemical agents, which comprises (a) one or more mineral components, (b) one or more light weight additives, and (c) one or more water soluble binders.

First of all, the Examiner states in the paragraph no. 4 of the Office action:

"Welshimer et al discloses a granulate material which can comprise inorganic compounds such as silica, calcium carbonate and zeolite, (see paragraph 0013 and 0023) and a binder which can comprise materials such as amino acids, (see paragraph 0025), in amounts of 2-20 weight percent, (see paragraph 0025)."

However, amino acids are listed only as one of numerous possible binders in paragraph [0026]. Similarly, Welshimer's mineral component can be dolomite, gypsum or limestone (paragraph [0022]), and dolomite and gypsum are not consistent with claim 1. Accordingly, Welshimer does not **anticipate** claim 1.

Moreover, the binders in Welshimer (which can be amino acids) are utilized to bind the ingredients into a granular substrate which resists attrition, does not degrade, and therefore maintains particle size during handling (see paragraph [0025]).

In contrast, in the present invention amino acid is used as a medicine to provide the flower thinning effect. Therefore, the function of amino acid in Welshimer, when used, is different from that in the present invention.

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Secondly, the Examiner also states in the paragraph no 2 of the Office action: "The mixture is pelletized to form particles having a size of 0.075 -3 mm which is within the claimed size range. See paragraph 0037."

However, the Examiner has misinterpreted the reference as disclosing "0.075-3 mm." In fact, paragraph [0037] discloses "a size guide number of between 75 and 300," which means "0.75-3 mm." The range of "0.75-3 mm" is "750-3000  $\mu\text{m}$ ," **the minimum of which is more than 20 times greater than the maximum in the 1.2-30  $\mu\text{m}$  average particle diameter in claim 1.** Not only does this disclosure not anticipate the present claims, the lack of overlap in the ranges means that there is no suggestion for the claimed range, and there can be no *prima facie* case of obviousness.

In the present invention, when an average particle diameter P exceeds 30  $\mu\text{m}$ , since an additive added to an inorganic composition of poor water solubility is not sufficiently adsorbed, not only durability of effect of the flower thinning agent tends to be insufficient, but also medicine damage is easily caused, (see page 15, lines 3-12 of the present specification.)

For example, in Comparative Example 4 in Table 2, the average particle diameter P of the flower thinning agent is 48.21  $\mu\text{m}$  exceeding the upper limit 30  $\mu\text{m}$  of the present invention, and in Comparative Application Example 4 in Table 5, the flower thinning agent of Comparative Example 4 is applied to an apple (Fuji).

As the results are shown in Table 5, the fruition rates of the lateral flower are as higher as 64.6% and 63.6% at the effective ingredient concentrations of 0.33% and 1.00%, as compared with

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the results of Application Examples 1-21 (Table 4) in which the flower thinning agents of Examples 1-21 are applied. Needless to say, as the fruition rate becomes high, the flower thinning effect becomes low. In addition, in Comparative Application Example 4, the medicine damage is "Δ: intermediate damage" between "□: small damage" and "X: great damage."

To summarize, Welshimer does not specifically require amino acid or limestone (calcium carbonate). Moreover, Welshimer's average particle diameter range does not overlap that in the present claims, and therefore it is apparent that Welshimer does not satisfy the equations set forth in the claims.

Moreover, the effects of amino acid in the present invention are completely different from those of the amino acid when used as a binder in Welshimer.

Therefore, the present invention is not anticipated by or obvious over Welshimer.

**Claims 7-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Welshimer as applied to claims above, and further in view of Walker (U.S. Patent No. 6,110,866). (Office action paragraph no. 6)**

The rejection of claims 7-9 is respectfully traversed, and reconsideration is requested.

Walker discloses agricultural compositions which are used to improve plant growth, enhance pest control and facilitate bioremediation.

The Examiner states in the paragraph no. 6 of the Office action:

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"Welshimer discloses a granulate mixture suitable for use as a fertilizer and/or pesticied. Welshimer does not disclose incorporating calcium phosphate into the mixture. Walker teaches at col. 3, lines 5-19 that suitable inorganic materials for forming fertilizers and carriers for fertilizers, pesticides, etc., include both limestone, (calcium carbonate as taught by Welshimer) as well as calcium phosphate. Therefore, it would have been obvious to one of ordinary skill in the art the time the invention was made to have employed calcium phosphate instead of calcium carbonate in view of their art recognized equivalence for this purpose."

However, in Welshimer, mineral components such as limestone (calcium carbonate) are used to manufacture a granular substrate for use **as a carrier for chemical agents**, while in Walker, monocalcium phosphate, limestone etc., are used **as an inorganic fertilizer**.

These purposes in the two references--carrier for chemical agents and inorganic fertilizer--are completely different from each other, and therefore, there is no suggestion or motivation for one of skill in the art to substitute the monocalcium phosphate disclosed by Walker for the limestone (calcium carbonate) disclosed by Welshimer.

In addition, monocalcium phosphate disclosed by Walker must naturally be **water-soluble**, as apparent from fertilizers Walker aims at, while calcium phosphate used in the present invention must be **difficultly water-soluble**. If the flower thinning agent comprises a water-soluble substance, it is easily flown away and, when spread proper term is rainy, the flower thinning effect is not expected, as disclosed in the present specification (page 3, lines 6-3 from the bottom).

Therefore, there is no motivation to combine Welshimer and Walker. Moreover, even if Welshimer and Walker were combined as proposed by the Examiner, this would not result in the present invention, because (a) Welshimer differs from the present invention in average particle size

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(as discussed in regard to the rejection over Walker), and (b) Walker differs from the present invention in water-soluble substance or difficultly water-soluble substance. Claims 7-9 are therefore not obvious over Walker and Welshimer, taken separately or in combination.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants' undersigned agent at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT & TRADEMARK OFFICE

Enclosure: Petition for Extension of Time

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